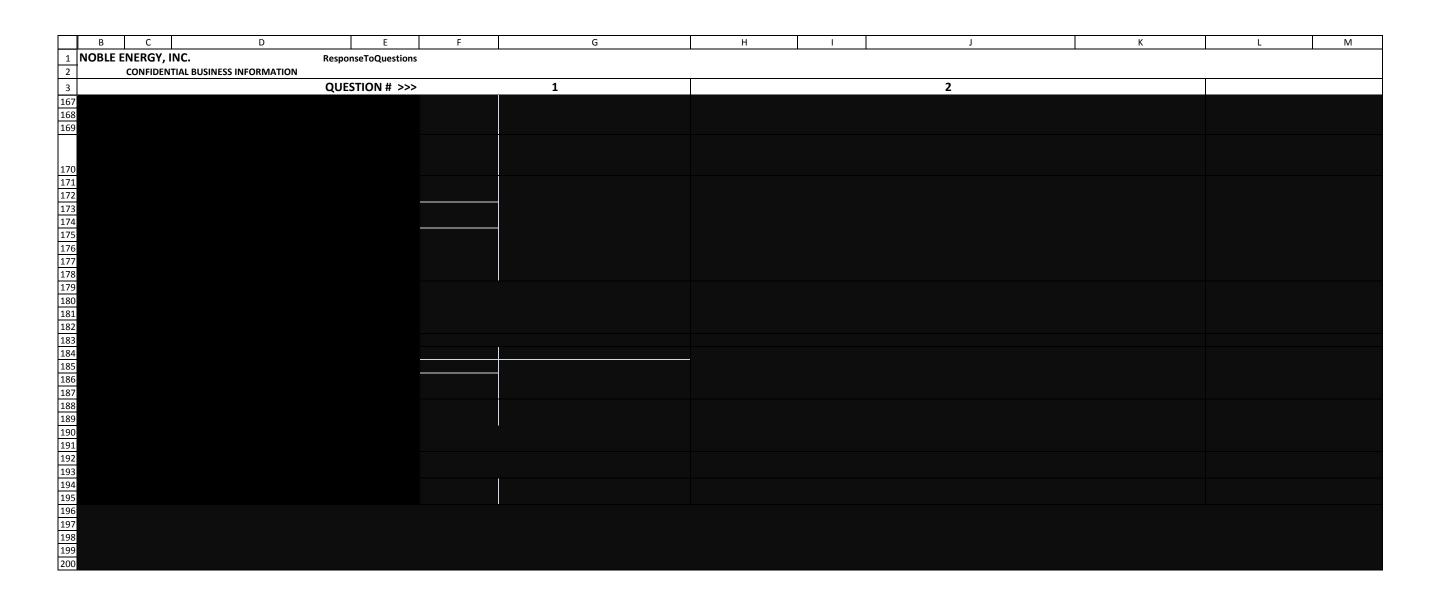
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1		ENERGY, I		ResponseToQuestions	· · · · · · · · · · · · · · · · · · ·	<u>-</u>		<u> </u>	-	· · · · · · · · · · · · · · · · · · ·	<u>-</u>	
2			TIAL BUSINESS INFORMATION									
3				QUESTION # >>>		1		1	2			1
4	Response Group #	EPA-Assigned Tank Vapor Capture System #	Tank Battery Location Name		associated with their common tank vapor	If incorrect, provide correct identification and explain. [Add or delete rows as necessary to include all associated tanks with common tank vapor capture systems]	tank vapor capture system & control	If yes, what was the date the analysis was conducted? [Date]	analysis was performed to ensure that the tank vapor capture system and control device were adequately designed and sized to handle reasonably foreseeable fluctuations in emissions and minimize emissions to the atmosphere to the maximum extent	Supply all documents supporting the design analysis of each tank vapor capture system and control device [list the filenames if provided electronically or an Attachmen name identifer if hard copy]	device since its	If yes, what was the date the analysis was conducted? [Date]
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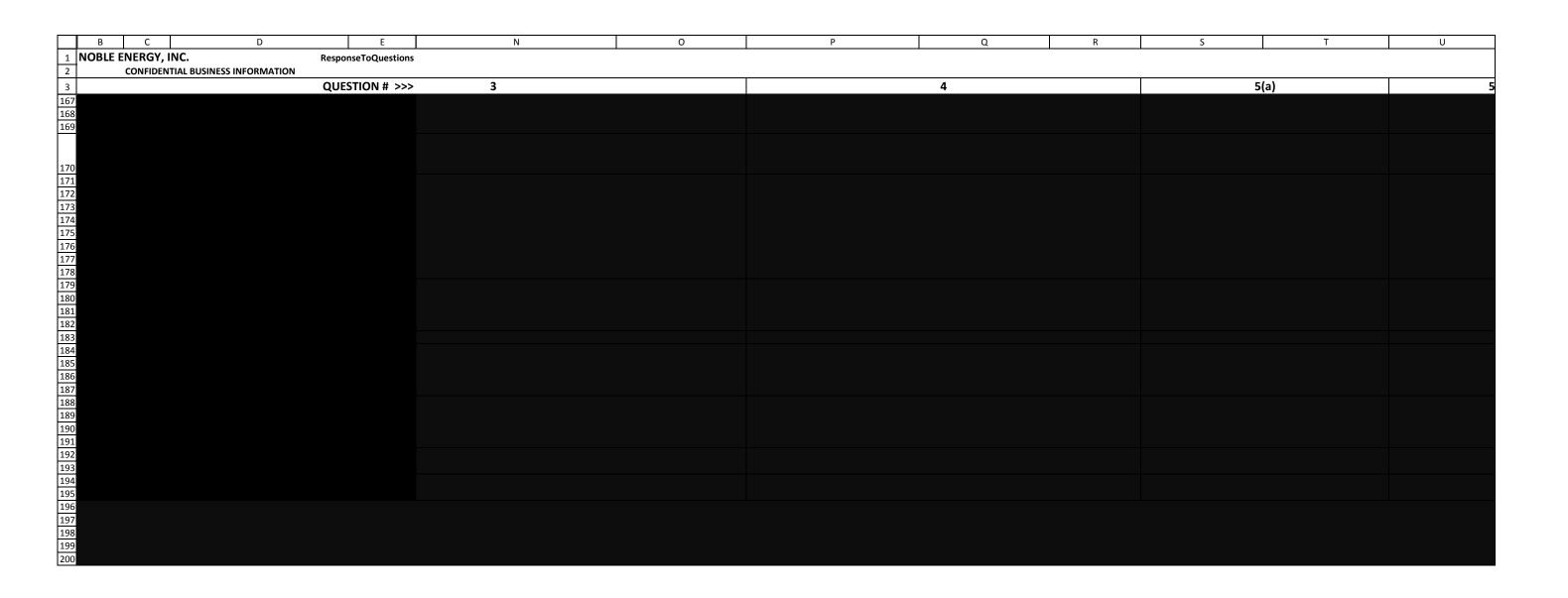




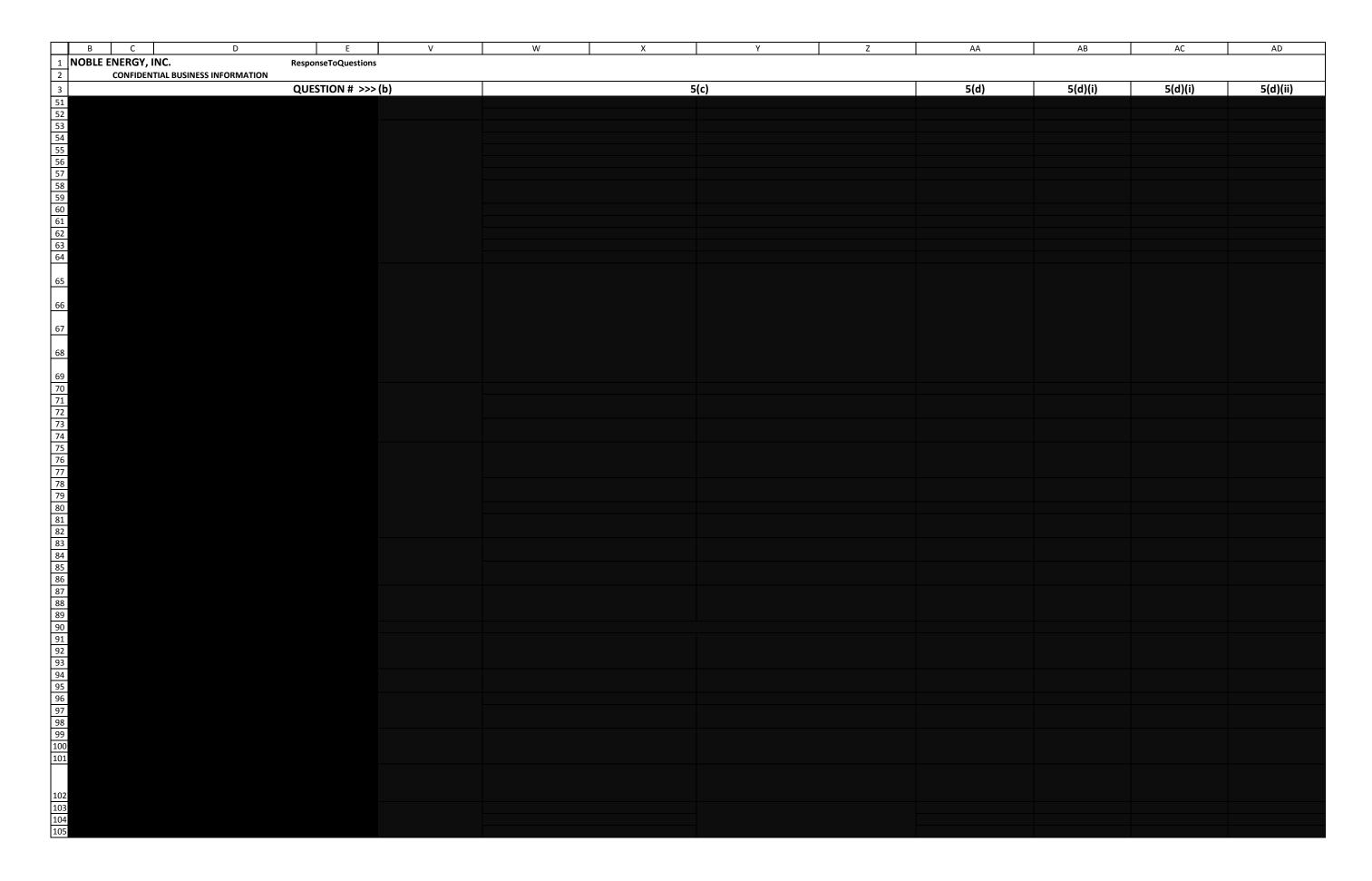


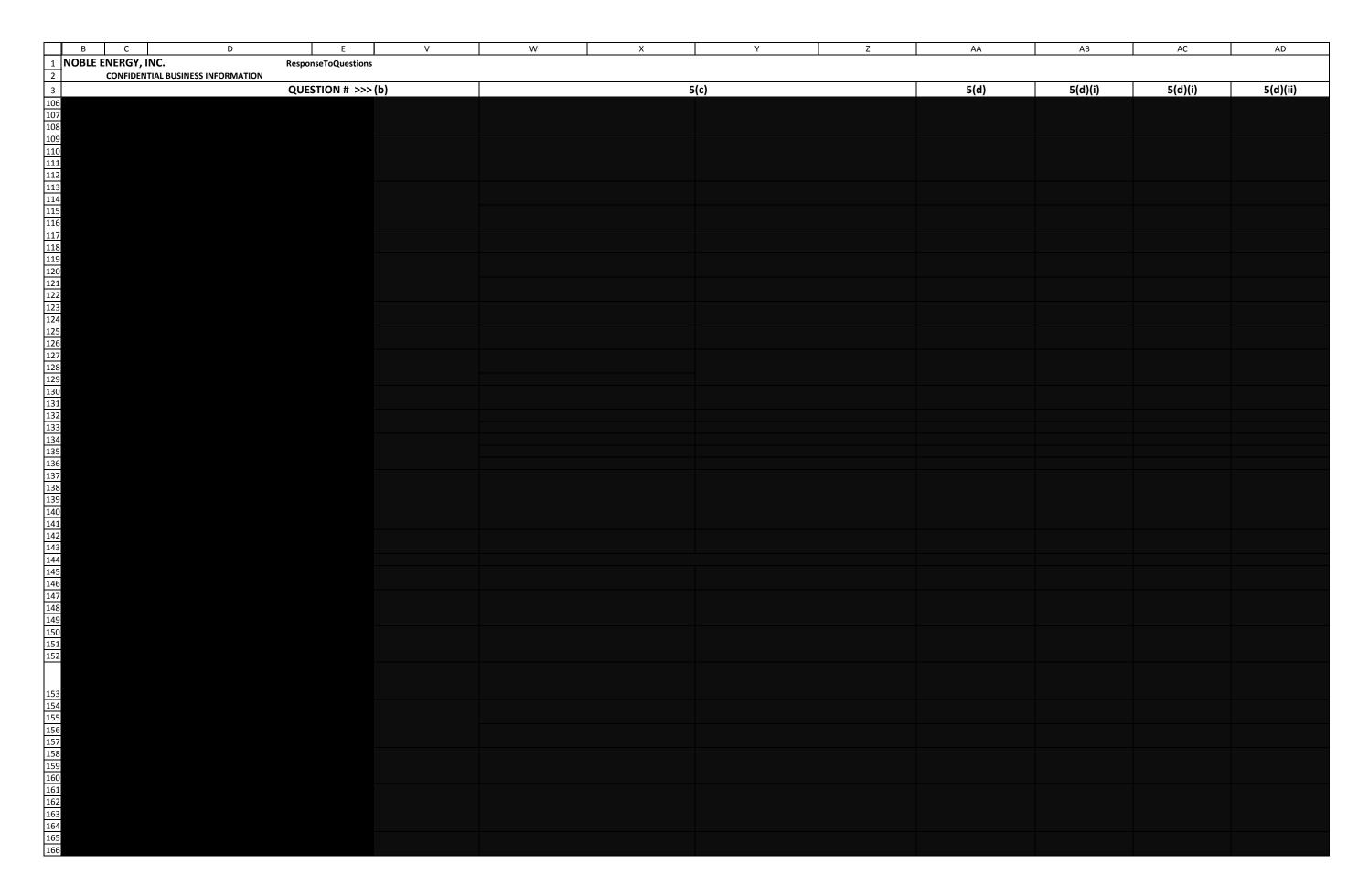
	В	С	D		E	N	0	P	Q	R	S	Т	U
1 1	NOBLE E	NERGY, II	NC.	Respo	nseToQuestions		1		•		1	1	
2		CONFIDENT	TIAL BUSINESS INFORMATION								1		Γ
3				QUE	STION # >>>	3			4	1	5	(a)	5
4	Response Group #	EPA-Assigned Tank Vapor Capture System #	Tank Battery Location Name		APCD ID (AIRS AFS #)	If yes, please state whether the design analysis was performed to ensure that the tank vapor capture system and control device were adequately designed and sized to handle reasonably foreseeable fluctuations in emissions and minimize emissions to the atmosphere to the maximum extent practicable. If not, why not	Supply all documents supporting the design analysis of each tank vapor capture system and control device [list the filenames if provided electronically or an Attachmen name identifer if hard copy]	and supply all input parameters, calculations and supporting documents of the design analysis of each tank vapor capture system and control device.	emissions attributed with		Piping & instrumentation diagram of the process (wellhead(s) to control device). [list the filenames if provided electronically or an Attachment name identifer if hard copy]	capture system, describe	Identify the gas gathering pipeline into which the tank battery location enters. [Name of P/L(s)]
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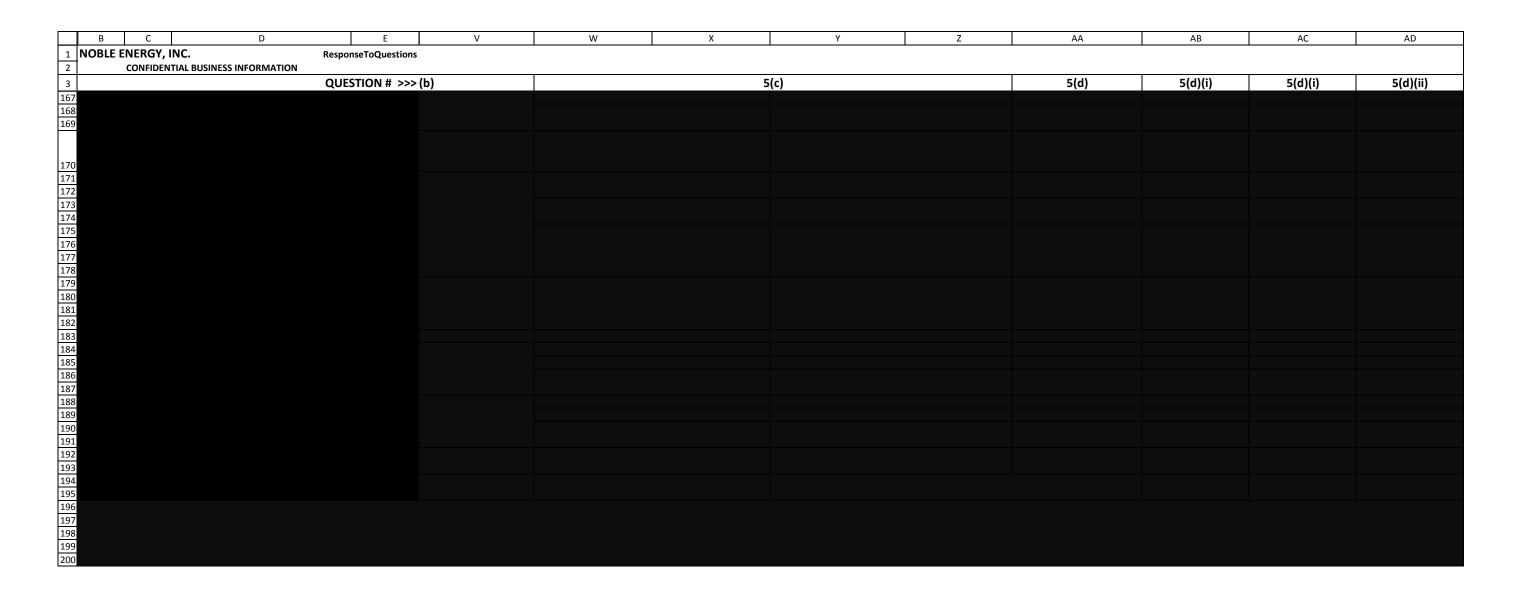




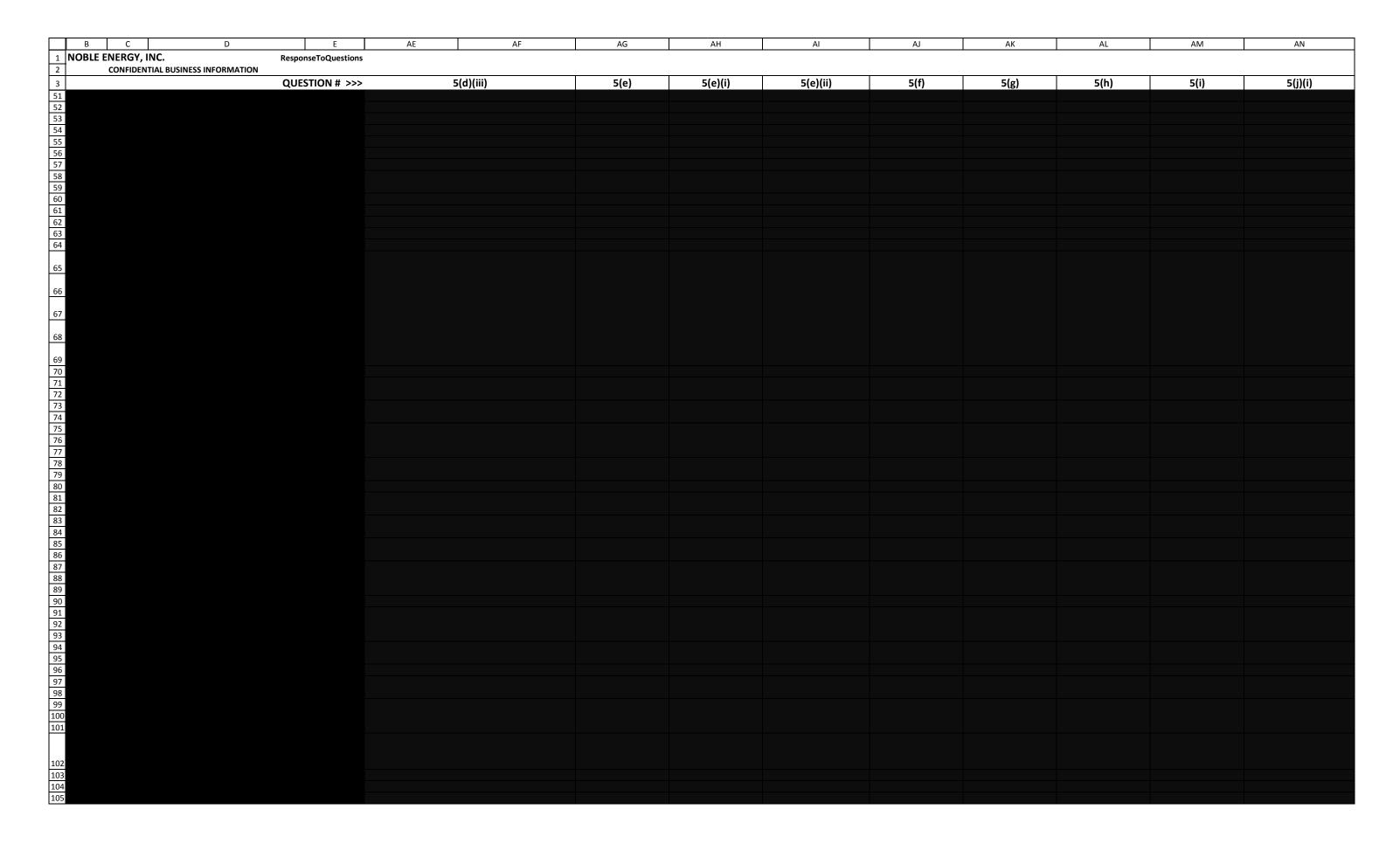
	В	С	D	E	V	W	Х	Υ	Z	AA	AB	AC	AD
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2		CONFIDEN	TIAL BUSINESS INFORMATION			1				1	1		
3		1	T	QUESTION # >>>	(b)			5(c)	T	5(d)	5(d)(i)	5(d)(i)	5(d)(ii)
4	Response Group #	EPA-Assigned Tank Vapor Capture System #	Tank Battery Location Name	APCD ID (AIRS AFS #)	What is the maximum allowable operating pressure of that pipeline? [psig]	separ	s which flow to the initial ator(s). and API No.]	How is production from those wells set to flow to the initial separator(s) (e.g. based on time, pressure, other parameter(s), or a combination of these)?	Can more than one wel flow to an initial separator concurrent with another well or wells?	Provide a description, name and tag # ID of the initial separator(s) (e.g. single stage, dual stage, dual coil, HLP, VGR, etc.).	operating pressure and temperature.	2nd Stage - Maximum operating pressure and temperature. [psig and °F, if applicable]	2nd Stage - describe where flash emissions from this stage is routed. [if applicable]
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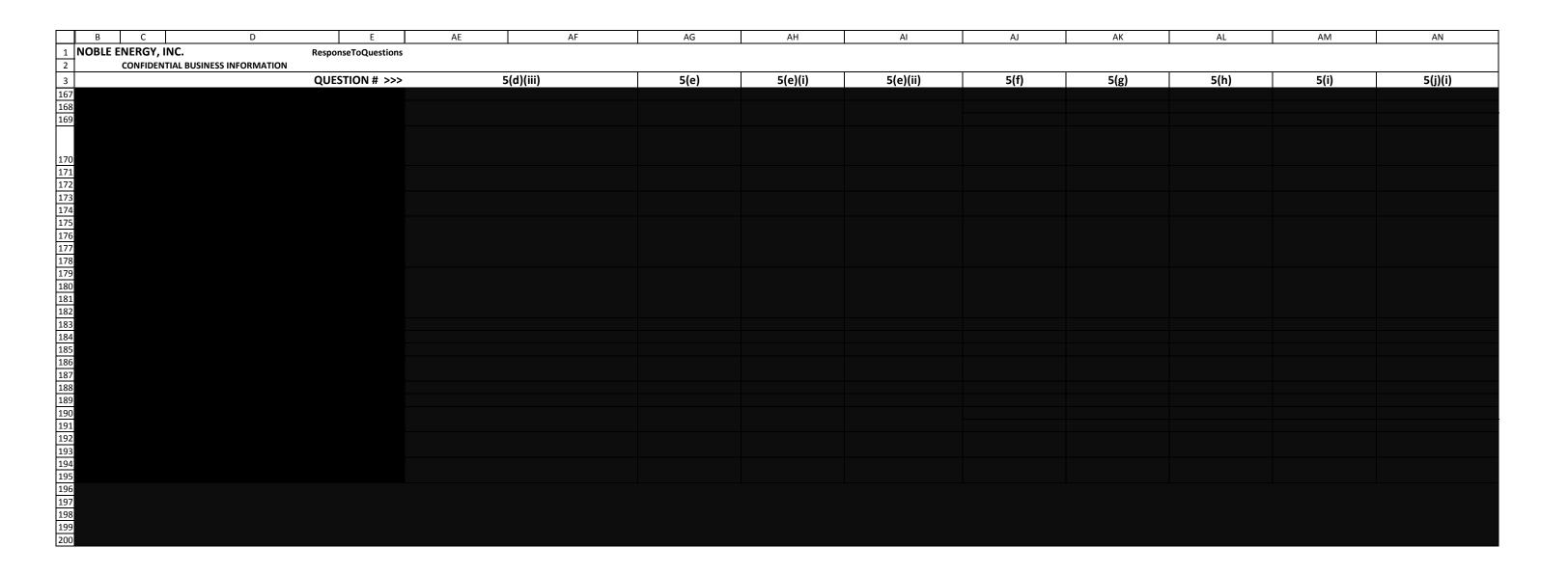




В	С	D		E	AE	AF	AG	AH	Al	AJ	AK	AL	AM	AN
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2	CONFIDEN	ITIAL BUSINESS INFORMATION						_						
3	T	T	QUESTI	ION # >>>	5	(d)(iii)	5(e)	5(e)(i)	5(e)(ii)	5(f)	5(g)	5(h)	5(i)	5(j)(i)
Response Group #	EPA-Assigned Tank Vapor Capture System #	Tank Battery Location Name		PCD ID IRS AFS #)		If yes, provide a narrative description.	Is there an intermediat separation vessel(s) between the initial separator and the condensate storage tank? [Yes or No]	e Intermediate separation vessel - Maximum opera ing pressure and temperature. [psig and °F, if applicable]	Describe where flash emissions from the intermediate separation vessel(s) are routed.	Condensate outlet pipe interior diameter from the separation vessel immediately upstream of the condensate storage tank. [inches]	from the separation		of the condensate	If intermittent batches, what triggers a condensate liquid dumping event?
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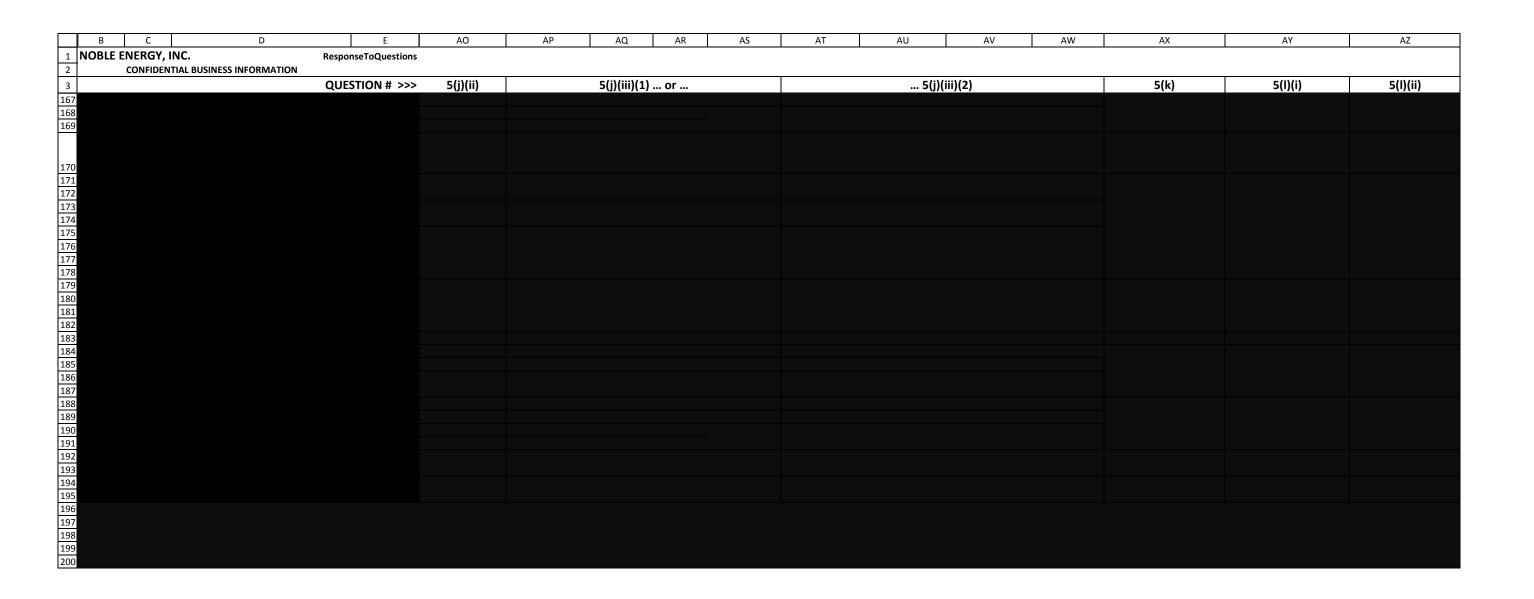




	В	С		D		E	AO	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ
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2		CONFIDEN	TIAL BUSINESS INFO		OUE	CTION # >>>	r/:\/::\	-	F(:\/:::\/a\			1	r/:\/	/:::\/a\		F/I-)	F(I)(:)	F/I\/::\
3			Ι		QUES	STION # >>>	5(j)(ii)		5(j)(iii)(1)	or			5(j)((III)(2) 		5(k)	5(I)(i)	5(I)(ii)
4	Response Group #	EPA-Assigned Tank Vapor Capture Systen #	Tank Battery Loca	ation Name		APCD ID (AIRS AFS #)	immediately upstream of the	2008-2013 Data. [bbl/day]	Dumping frequency based on average daily oil production. [dumping events/day]	a dumping	Instantaneous flow rate. [gallons/minute]	Flow coefficient of the dump valve. [gpm/psi ^{0.5}]	Pressure differential across the dump valve. [psi]	liquid.	Instantaneous flow rate. [gallons/minute]	For each tank vapor capture system, provide the number of associated condensate storage tank(s) and their volume. [# and barrels]	in proceure relief cettings	Thief hatch gasket/seal information, including the type of gasket/seal used (e.g. rubber, Viton).
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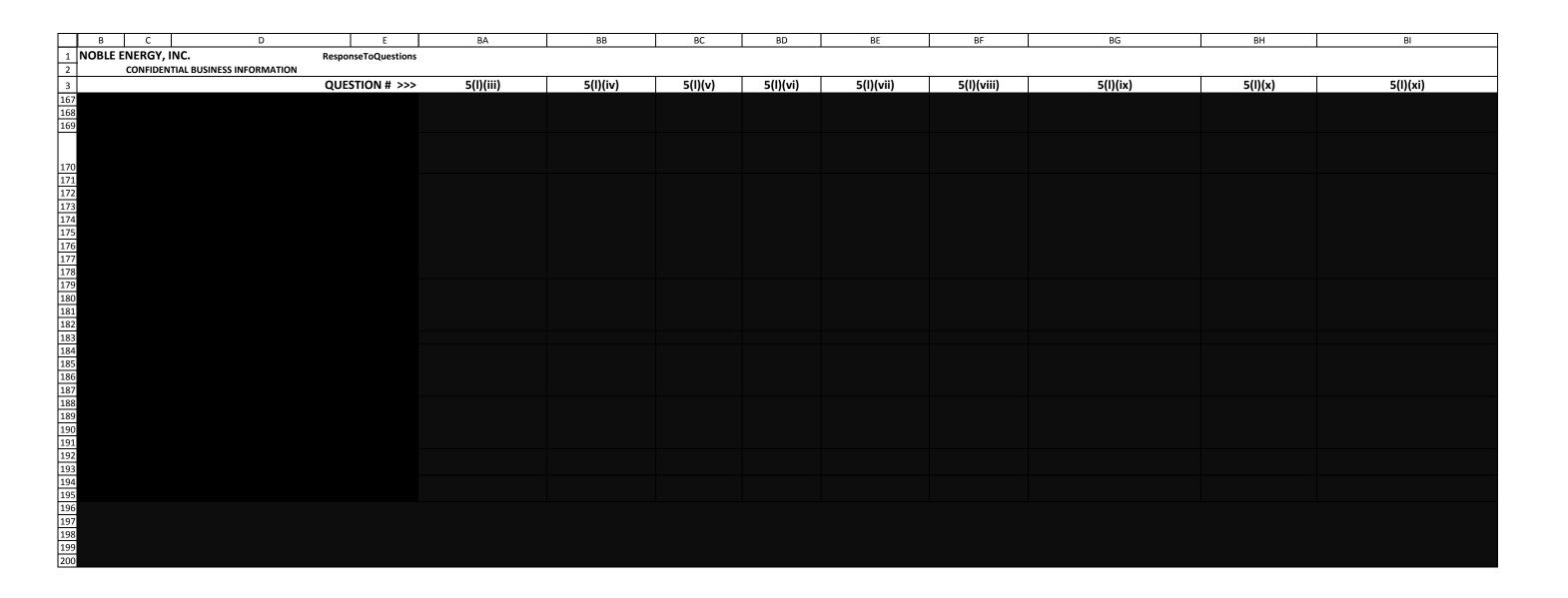




В	С	D		F	ВА	ВВ	ВС	BD	BE	BF	BG	ВН	BI
	E ENERGY,		Respo	nseToQuestions		55	50		<u> </u>		50	511	J.
2		NTIAL BUSINESS INFORMATION											
3			QUE	STION # >>>	5(I)(iii)	5(I)(iv)	5(I)(v)	5(I)(vi)	5(I)(vii)	5(I)(viii)	5(I)(ix)	5(I)(x)	5(I)(xi)
Response Group #	EPA-Assigned Tank Vapor Capture System #	Tank Battery Location Name		APCD ID (AIRS AFS #)	vapor capture system collects vapor from multiple tanks, use the average pipe length for all the condensate storage tanks	the tank vapor capture system from the condensate storage tank(s) to the control	Number of short radius elbows (short radius elbows have a radius equal to the pipe diameter). [#]	Number of long radius elbows (long radius elbows have a radius 1.5 times the pipe diameter). [#]	Number and type of valves (e.g. gate, check, globe, etc.). [# and Type]	combustor (enclosed flare) burner assembly as provided by the manufacturer of the	the frequency of draining these	Set-point pressure and maximum flow capacity at that set-point of any backpressure valves installed on the vapor collection system. [ounces/in² and scf/hr]	Provide a narrative description of the operations and maintenance program Noble employs to ensure emissions are minimized from the condensate tank(s), tank vapor capture system(s) / thief hatch(es) / pressure relief valve(s), and the frequency of such. [list the filenames if provided electronically or an Attachment name identifer if hard copy and scf/hr]
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B C D	E	BA	ВВ	ВС	BD	BE	BF	BG	ВН	ВІ
1 NOBLE ENERGY, INC.	ResponseToQuestions									
2 CONFIDENTIAL BUSINESS INFORMATION 3	QUESTION # >>>	5(I)(iii)	5(I)(iv)	5(I)(v)	5(I)(vi)	5(I)(vii)	5(I)(viii)	5(I)(ix)	5(I)(x)	5(I)(xi)
	QUESTION III	3(1)(111)	3(1)(10)	3(1)(4)	3(1)(41)	3(1)(411)	3(1)(4111)	3(1)(1X)	3(1)(X)	3(1)(X1)
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B C D	E	BA	ВВ	ВС	BD	BE	BF	BG	ВН	BI
1 NOBLE ENERGY, INC. 2 CONFIDENTIAL BUSINESS INFORMATION	ResponseToQuestions									
3	QUESTION # >>>	5(I)(iii)	5(I)(iv)	5(I)(v)	5(I)(vi)	5(I)(vii)	5(I)(viii)	5(I)(ix)	5(I)(x)	5(I)(xi)
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3		,	QUESTION # >>>		5(m)(i)	5(m)(ii)	5(m)(iii)	6(a)	6(b)	
4 5	Response Group #	EPA-Assigned Tank Vapor Capture System ## amen and a state of the control of the	APCD ID (AIRS AFS #)	Identify the type of control device used (e.g. combustion device, VRU, etc.).	volatile organic compounds can	recommended maintenance and service requirements. [list the filenames if provided electronically or an	on the combustor(s) and the frequency of such. [list the filenames if provided	Filename of extended hydrocarbon liquid analysis of a pressurized oil sample from the pressurized vessel immediately upstream of the condensate storage tank(s). [filename]	API Gravity of "sales oil" in condensate storage tank.	Reid Vapor Pressure of "sales oil" in condensate storage tank. [psia]
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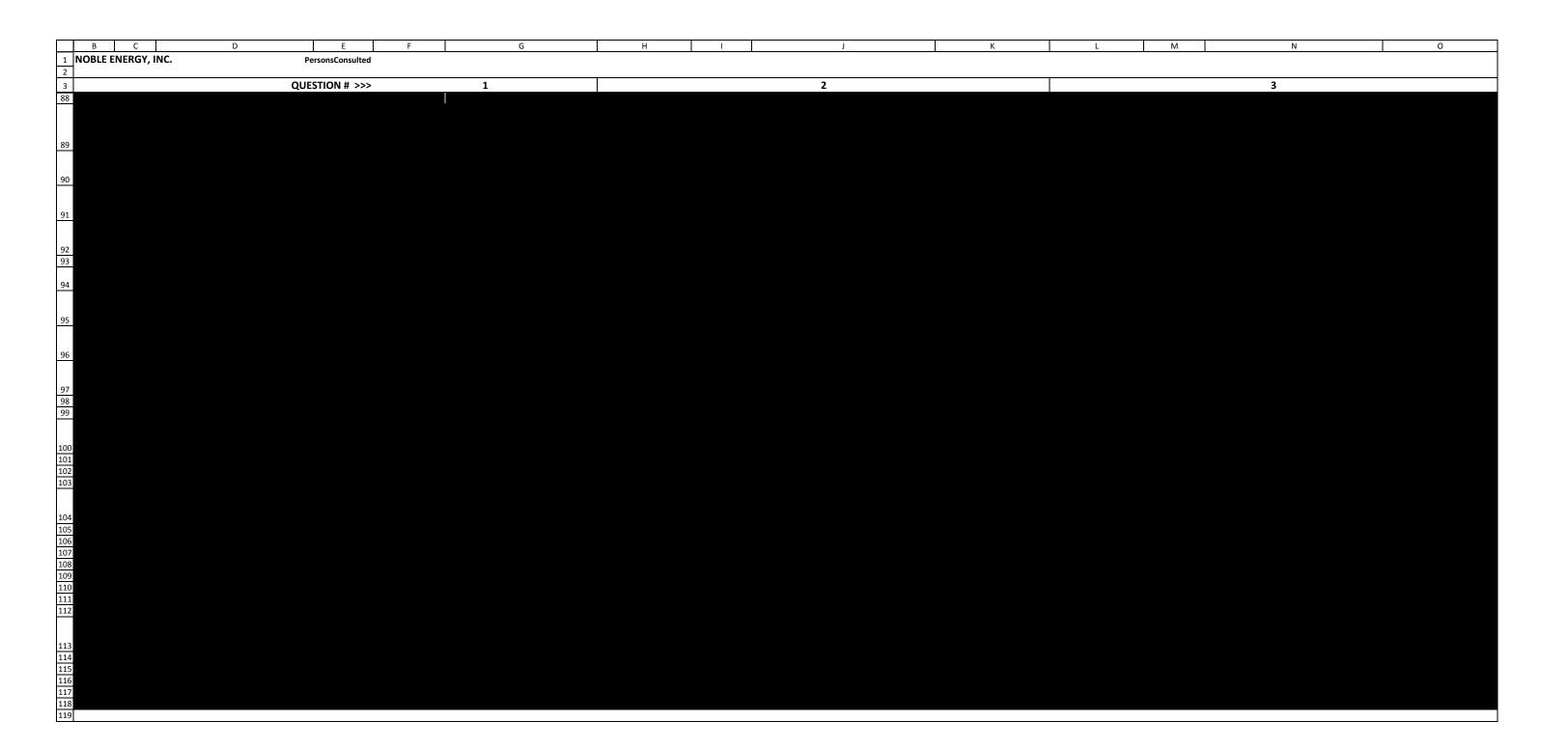
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1 NOBLE ENERGY, INC. 2 CONFIDENTIAL BUSINESS INFORMATION	ResponseToQuestions							
2 CONFIDENTIAL BUSINESS INFORMATION 3	QUESTION # >>>	5(m)	5(m)(i)	5(m)(ii)	5(m)(iii)	6(a)	6(b)	
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B C D	E	ВЈ	ВК	BL	BM	BN	ВО	BP
1 NOBLE ENERGY, INC.	ResponseToQuestions							
2 CONFIDENTIAL BUSINESS INFORMATION	QUESTION # >>>	5(m)	E/m\/i\	E/m\/ii\	E/m\/iii\	6(a)	6(b)	,
3 106	QUESTION # >>>	5(111)	5(m)(i)	5(m)(ii)	5(m)(iii)	θ(a)	O(D)	
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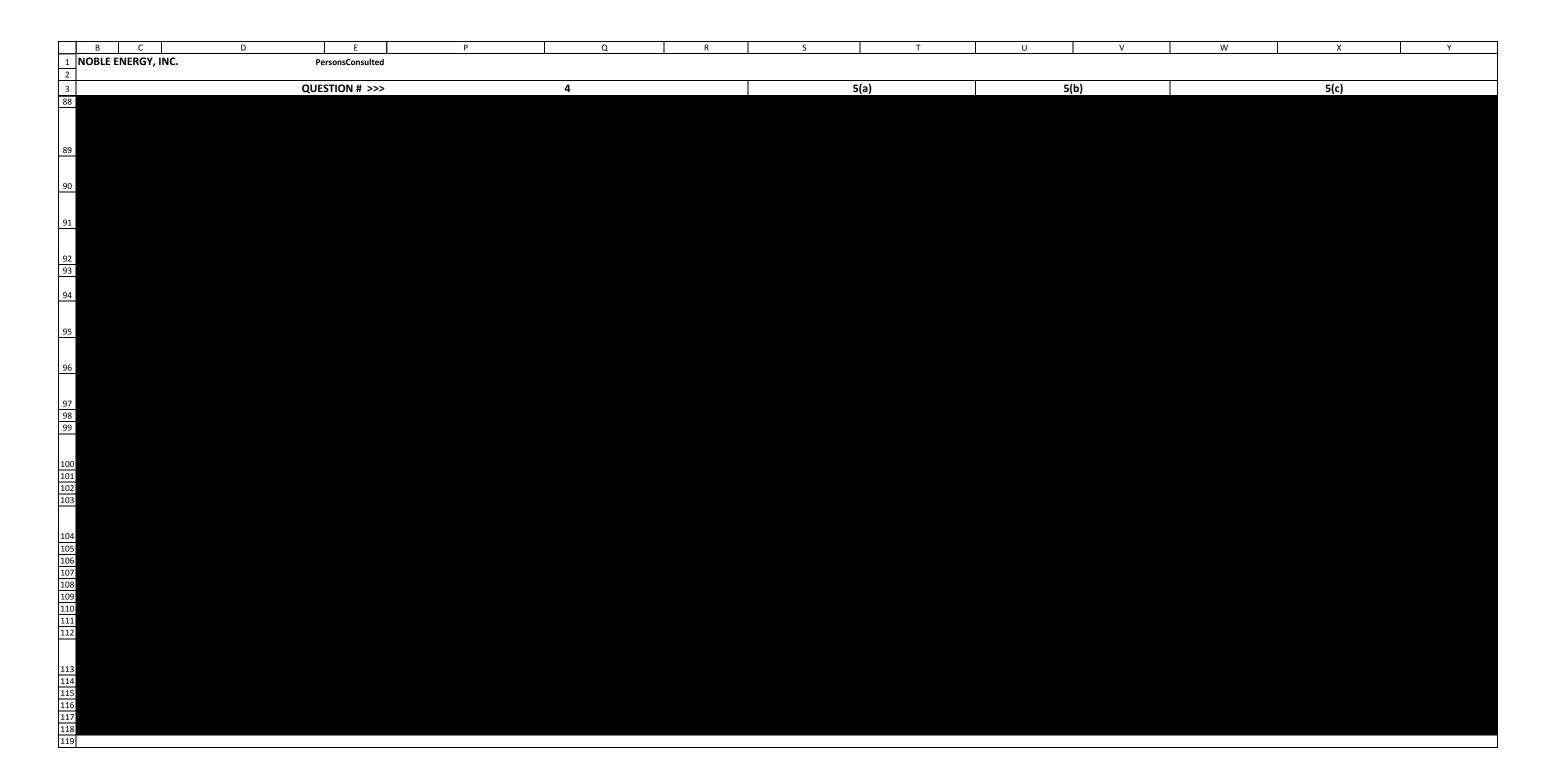
	ВС	D	E	F	G	Н	I	J	K	L	М	N	0
1 NOI	BLE ENERGY,	INC.	PersonsConsulted	I									
3			QUESTION # >>>	•	1			2				3	
4	response Group # EPA-Assigned Tank Vapor Capture System #	Tank Battery Location Name	APCD ID (AIRS AFS #)	Are the tank battery location names correctly associated with their common tank vapor capture system #s?	If incorrect, provide correct identification and explain.	system & control	If yes, what was the date the analysis was conducted?	adequately designed and sized to handle reasonably foreseeable fluctuations in	Supply all documents supporting the design analysis of each tank vapor capture system and control device	Did Noble conduct a design analysis of the tank vapor capture system & control device since its construction?	If yes, what was the date the analysis was conducted?	If yes, please state whether the design analysis was performed to ensure that the tank vapor capture system and control devic were adequately designed and sized to handle reasonably foreseeable fluctuations in emissions and minimize emissions to the atmosphere to the maximum extent practicable. If not, why not	analysis of each tank vapor
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В	C D	E	Р	Q	R	S	Т	U	V	W	X	Y
1 NOBLE E	NERGY, INC.	PersonsConsulted										
3		UESTION # >>>		4		5	i(a)	5	b)		5(c)	
Bespo	EPA-Assigned Tank Vapor Capture System # water the complete of	APCD ID (AIRS AFS #)	For tank vapor capture systems analyses not already provided in Questions 2 & 3, conduct an analysis and supply all input parameters, calculations and supporting documents of the design analysis of each tank vapor capture system and control device.	liquid dump events from the pressurized vessel upstream of the condensate storage	What is the flow capacity of the existing tank vapor capture system(s) and control device(s)?	Piping & instrumentation diagram of the process (wellhead(s) to control device).	If more than one condensate storage tank is present within a tank vapor capture system, describe how condensate flows between condensate storage tanks.	which the tank battery	What is the maximum allowable operating pressure of that pipeline?	Provide a list of the wells which flow to the initial separator(s).	How is production from those wells set to flow to the initial separator(s) (e.g. based on time, pressure, other parameter(s), or a combination of these)?	Can more than one well flow to an initial separator concurrent with another well or wells?
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3		E		QUESTION # >>>	5(d)	5(d)(i)	5(d)(i)	5(d)(ii)	;	5(d)(iii)	5(e)	5(e)(i)	5(e)(ii)	5(f)	5(g)
4	Response Group #	EPA-Assigned Tank Vapor Capture Syster #	Tank Battery Location Name	APCD ID	Provide a description, name and tag # ID of the initial separator(s) (e.g. single stage, dual stage, dual coil, HLP, VGR, etc.).	1st Stage - Maximum operating pressure and temperature.	operating pressure and	2nd Stage - describe where flash emissions from this stage is routed.	Does the final separator stage feature a device on the liquid outlet line to prevent a vortex from forming during a liquid dump event?	r If yes, provide a narrative description.	Is there an intermediate separation vessel(s) between the initial separator and the condensate storage tank?	Intermediate separat vessel - Maximum	Describe where flash emissions from the intermediate separation vessel(s) are routed.	Condensate outlet pipe interior diameter from the separation vessel immediately upstream of the condensate storage tank.	Condensate outlet pipe orifice plate diameter from the separation vessel immediately upstream of the condensate storage tank.
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1 NOBLE ENERGY, INC.	PersonsConsulted		, -: <u> </u>		,								
3	QUESTION # >>>	5(d)	5(d)(i)	5(d)(i)	5(d)(ii)	1	5(d)(iii)		5(e)	5(e)(i)	5(e)(ii)	5(f)	5(g)
88	QUESTION # >>>	3(u)	3(u)(i)	3(u)(i)	3(4)(11)		J(u)(iii)		3(e)	3(e)(i)	3(e)(ii)	3(1)	J(g)
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1 NOBL	E ENERGY,	INC.		PersonsConsulted														
3				QUESTION # >>>	5(h)	5(i)	5(j)(i)	5(j)(ii)		5(j)(iii)(1)	or			5(j)	(iii)(2)		5(k)	5(I)(i)
4 Besponse Group #	EPA-Assigned Tank Vapor Capture System #	Tank Battery Loca	ation Name	APCD ID (AIRS AFS #)	is trucked or piped offsite from the condensate storage tank if neither provide	Is the flow of condensate from the separation vessel immediately upstream	If intermittent batches, what triggers a condensate liquid dumping event?	Maximum condensate volume of the separation vessel	Average daily Oil Production from Noble's COGIS 2008-2011 Data.	Dumping frequency	Duration of	Instantaneous flow rate.	Flow coefficient of the dump valve.		Specific Gravity of	Instantaneous flow rate.	For each tank vapor capture system, provide the number of associated condensate storage tank(s) and their volume.	Pressure relief settings (psi) on the thief hatch and pressure relief valve on the condensate storage tank(s) or tank vapor capture system. Note any changes in pressure relief settings that may have occurred and date when changed.
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1 NOBLE ENERGY, INC.	PersonsConsulted								·		·
2 3	QUESTION # >>>	5(h)	5(i)	5(j)(i)	5(j)(ii)	5(j)(iii)(1) (or		5(j)(iii)(2)	5(k)	5(I)(i)
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1 NC	BLE ENERGY, INC.	PersonsConsulted											
3	e	QUESTION # >>>	5(I)(ii)	5(I)(iii)	5(I)(iv)	5(I)(v)	5(I)(vi)	5(I)(vii)	5(I)(viii)	5(I)(ix)	5(I)(x)	5(I)(xi)	5(m)
	Fesponse Group # EPA-Assigned Tank Vapor Capture System # # amen A was a contract of the cont	APCD ID (AIRS AFS #)	Thief hatch gasket/seal information, including		condensate storage	Number of short radius elbows (short radius elbows have a radius equal to the pipe diameter).	Number of long radius elbows (long radius elbows have a radius 1.5 times the pipe diameter)	Number and type of valves (e.g. gate, check, globe, etc.).	burner assembly as	Describe any low points in the tank vapor collection system piping where liquids could accumulate. Describe the frequency of draining these liquids. Describe the indicator, if any, that notifies the operator that liquids must be drained.	Set-point pressure and maximum flow capacity at that set-point of any backpressure valves installed on the vapor collection system.	Provide a narrative description of the operations and maintenance program Noble employs to ensure emissions are minimized from the condensate tank(s), tank vapor capture system(s) / thief hatch(es) / pressure relief valve(s), and the frequency of such.	Identify the type of control device used (e.g. combustion device, VRU, etc.).
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4	Response Group #	EPA-Assigned Tank Vapor Capture System #	Tank Battery Location Name	APCD ID (AIRS AFS #)	maximum flow rate of tank vapors	manufacturer recommended maintenance and service	Provide a narrative description of the servicing Noble performs on the combustor(s) and the frequency of such.	Filename of extended hydrocarbon liquid analysis of a pressurized oil sample from the pressurized vessel immediately upstream of the condensate storage tank(s).	API Gravity of "sales oil" in condensate storage	Reid Vapor Pressure of "sales oil" in condensate storage tank.
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Response Group #	EPA-Assigned Tank Vapor Capture System # Lauk Battery Parker Tank	APCD ID (AIRS AFS #)	Are the tank battery location names correctly associated with their common tank vapor capture system #s?	If incorrect, provide correct identification and explain.	Did Noble conduct a design analysis of the tank vapor capture system & control device prior to its construction?	was the date the analysis was conducted?	tank vapor capture system and control device were adequately designed and sized to handle reasonably foreseeable fluctuations in	Supply all documents supporting the design analysis of each tank vapor capture system and control device	Did Noble conduct a design analysis of the tank vapor capture system & control device since its construction?	If yes, what was the date the analysis was conducted?	If yes, please state whether the design analysis was performed to ensure that the tank vapor capture system and control device were adequately designed and sized to handle reasonably foreseeable fluctuations in emissions and minimize emissions to the atmosphere to the maximum extent practicable. If not, why not
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4	Response Group #	EPA-Assigned Tank Vapor Capture System #	Tank Battery Location Name	APCD ID (AIRS AFS #)	analysis of each tank vapor capture system and control device	and supply all input parameters,	liquid dump events from the pressurized vessel upstream	capture system(s) and	diagram of the process (wellhead(s) to control device).		gathering pipeline into which the tank battery	proceure of that	Provide a list of the wells which flow to the initial separator(s).
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4	Response Group #	EPA-Assigned Tank Vapor Capture System #	Tank Battery Location Name	APCD ID (AIRS AFS #)	time, pressure, other	Can more than one we flow to an initial separator concurrent with another well or wells?	and tag # ID of the initial	operating pressure and	operating pressure and	2nd Stage - describe where flash emissions from this stage is routed.		If yes, provide a narrative description.	senarator and the	Intermediate separation vessel - Maximum operating pressure and temperature.
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4	Response Group #	EPA-Assigned Tank Vapor Capture System #	Tank Battery Location Name	APCD ID (AIRS AFS #)	Describe where flash emissions from the intermediate separation vessel(s) are routed.	Condensate outlet pipe interior diameter from the separation vessel immediately upstream of the condensate storage tank.	from the separation vessel immediately upstream of the condensate storage	offsite from the condensate storage tank. If neither, provide	Is the flow of condensate from the separation vessel immediately upstream of the condensate storage tank continuous or in intermittent batches?	If intermittent batches, what triggers a condensate liquid dumping event?	separation vessel immediately	Average daily Oil Production from Noble's COGIS Database.	Dumping frequency based on average daily oil production.	Duration of a dumping event.	Instantaneous flow rate.	Flow coefficient of the dump valve.
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4	Response Group #	EPA-Assigned Tank Vapor Capture System #	Tank Battery Location Name		differential across	nvarocarnon	Instantaneous flow rate.	For each tank vapor capture system, provide the number of associated condensate storage tank(s) and their volume.	system. Note any changes	Thief hatch gasket/seal information, including the type of gasket/seal used (e.g. rubber, Viton).	Pipe length from the condensate storage tank(s) to the control device (if the vapor capture system collects vapor from multiple tanks, use the average pipe length for all the condensate storage tanks to the control device).	the tank vapor capture system from the condensate storage tank(s) to the control	(short radius elbows have a radius equal to the	elbows have a	Number and type of valves (e.g. gate, check, globe, etc.).
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Response Group #	EPA-Assigned Tank Vapor Capture System #	nk Battery Location Name	APCD ID (AIRS AFS #)	combustor (enclosed flare) burner assembly as provided by the manufacturer of the	Describe any low points in the tank vapor collection system piping where liquids could accumulate. Describe the frequency of draining these liquids. Describe the indicator, if any, that notifies the operator that liquids must be drained.	Set-point pressure and maximum flow capacity at that set-point of any backpressure valves installed on the vapor collection system.	tank vapor capture system(s) / thiof	Identify the type of control device used (e.g. combustion device,	The combustor manufacturer specifications showing the maximum flow rate of tank vapors under which a control efficiency of at least 95% for volatile organic compounds can be achieved.	The combustor manufacturer recommended maintenance and service requirements.	Provide a narrative description of the servicing Noble performs on the combustor(s) and the frequency of such.
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3	Tank Vapor Capture System#	Tank Battery Location Name	AIRS#	Well Facility Name	API Well No.	Earliest 1st Production Date	Oil Prod. 2013 (through May)			Oil Prod. 2010	Oil Prod. 2009	Oil Prod. 2008	Total Tank	Production Start Date Used (1/1/08 used if production	Total Days Operating 2008-2013	Average Daily Oil Production by Tank Battery Location (bbl/day)
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130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 162 163 164 165 166 167 168 169 170 171 172 173 174 179 180 181 182 183 186 187															